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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MEW, KEVIN D

ART UNIT PAPER NUMBER

2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/056,823	<b>Applicant(s)</b> KAUSHIK ET AL.	
	<b>Examiner</b> Kevin Mew	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12, 16-18, 22-28, 36-37, 41-47, 53, 57 and 58 is/are rejected.
- 7) ☒ Claim(s) 8-11, 13-15, 19-21, 29-35, 38-40, 48-52, 54-56 and 59-61 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance.. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                   |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                              | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/10/06</u> . | 6) <input type="checkbox"/> Other: _____                                                |

*Detailed Action*

*Response to Amendment*

1. Applicant's Remarks/Arguments filed on 11/10/2006 have been fully considered. Claims 1-61 are currently pending.
2. Acknowledgement is made of the amended abstract with respect to the objection to the specification set forth in the previous Office action. The correction is acceptable and the objection to the specification is now withdrawn.
3. Acknowledgement is made of the amended claims 14, 42, 56 with respect to the claim objections set forth in the previous Office action. The corrections are acceptable and the claim objections to claims 14, 42, 56 are now withdrawn.
4. Acknowledgement is made of the arguments made with respect to the claim objections to claims 1-6, 22-40 set forth in the previous Office action. The arguments are persuasive and the claim objections to claims 1-6, 22-40 are now withdrawn.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 7, 12, 18, 22-23, 28, 37, 41-42, 47, 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Crockett et al. (USP 5,619,644).

Regarding claim 1, Crockett discloses a fault tolerant method to update a Fiber Channel database (fiber channel storage subsystem, col. 5, lines 22-31), comprising:

receiving a first message (receiving record updates) from a commit master (from the host processor of a primary site, col. 10, lines 28-54);

detecting the loss of the commit master (detecting error condition/code of one of the system components at the primary site, col. 10, lines 45-67); and

resending the first message to each of a specified one or more devices (resending the record updates to the secondary data mover of the secondary site, col. 10, lines 62-66) if the first message or a prior message from the commit master includes update data (if the first message includes record updates, col. 10, lines 45-60), else aborting the update operation (secondary DASDs at the secondary site perform the update when there are record updates, col. 10, lines 62-67, col. 11, lines 1-3).

Regarding claim 22, Crockett discloses a Fiber Channel switch (fiber channel storage subsystem, col. 5, lines 22-31), comprising:

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a port for receiving and sending message signals (upper port, lower port, Fig. 3);

a database storage for storing at least a portion of a database (secondary DASD, element 116, Fig. 1);

a control unit for executing program instructions (primary storage controller, element 115, Fig. 1); and

storage, readable by the control means, having instructions for causing the control unit to receive (secondary storage controller 115, Fig. 1) a first message (to receive record updates) from a commit master (from the host processor of a primary site, col. 10, lines 28-54);

detect the loss of the commit master (detecting error condition/code of one of the system components at the primary site, col. 10, lines 45-67); and

resend the first message to each of a specified one or more devices (resending the record updates to the secondary data mover of the secondary site, col. 10, lines 62-66) if the first message or a prior message from the commit master includes update data (if the first message includes record updates, col. 10, lines 45-60), else aborting the update operation (secondary DASDs at the secondary site perform the update when there are record updates, col. 10, lines 62-67, col. 11, lines 1-3).

Regarding claim 41, Crockett discloses a digital network (fiber channel storage subsystem, col. 5, lines 22-31), comprising:

a first switch adapted to initiate a database update operation (primary host initiates an database update, col. 5, lines 57-67 and Fig. 1);

a second switch communicatively coupled to the first switch (secondary host 111 coupled to the primary host 101, Fig. 1), the second switch having database storage (secondary data mover 114, Fig. 1), a control circuit adapted to execute instructions (secondary storage controller, element 115, Fig. 1), and a storage (secondary DASD 116, Fig. 1) readable by the control circuit and having instructions encoded therein to cause the control circuit (microprocessor, element 370, Fig. 3)

to receive (secondary storage controller 115, Fig. 1) a first message (for receiving record updates) from a commit master (from the host processor of a primary site, col. 10, lines 28-54);

detect the loss of the commit master (detecting error condition/code of one of the system components at the primary site, col. 10, lines 45-67); and

resend the first message to each of a specified one or more devices (resending the record updates to the secondary data mover of the secondary site, col. 10, lines 62-66) if the first message or a prior message from the commit master includes update data (if the first message includes record updates, col. 10, lines 45-60), else aborting the update operation (secondary DASDs at the secondary site perform the update when there are record updates, col. 10, lines 62-67, col. 11, lines 1-3).

a control unit for executing program instructions (primary storage controller, element 115, Fig. 1); and

storage, readable by the control means, having instructions for causing the control unit to receive (primary storage controller, Fig. 1) a first message (for receiving record updates) from a commit master (from the host processor of a primary site, col. 10, lines 28-54);

Regarding claims 2, 23, 42, Crockett discloses the method of claims 1, 22, 41, further comprising updating an identified one or more entries in the Fiber Channel database with the update data (updating data and control information, col. 5, lines 47-56).

Regarding claims 7, 28, 47, Crockett discloses the method of claims 1, 22, 41, wherein the act of aborting comprises:

identifying which of the specified one or more devices can receive an abort message (identifying the secondary site can receive the failure information, col. 10, lines 20-27); and  
sending the abort message to the identified one or more devices (correlating the failure information to the secondary site, col. 10, lines 20-27).

Regarding claims 12, 53, Crockett discloses the method of claim 1, wherein the act of receiving a first message further comprises verifying the update data received as part of the first message (first message comprises control information of the update data, col. 5, lines 48-58).

Regarding claims 18, 37, Crockett discloses the method of claims 1, 22, wherein the act of resending the first message comprises:

identifying which of the specified one or more devices can receive the resent message (identifying the secondary site can receive the failure information, col. 10, lines 20-27); and  
resending the first message to those identified one or more devices (correlating the failure information to the secondary site, col. 10, lines 20-27).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-6, 24-27, 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crockett in view of Banks et al. (US Publication 2005/0018619).

Regarding claims 3-6, 24-27, 43-46, Crockett discloses all the aspects of the claimed invention set forth in the rejection of claims 2, 22, and 41 above, except fails to explicitly show the method of claim 2, wherein the Fiber Channel database comprises a zoning database, a name service database, a security database and a management database.

However, Banks discloses a Fiber Channel system that implements a zoning database wherein the zoning database provides name service, security and management (paragraphs 0016, 0037, 0054).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the distributed storage system of Crockett with the teaching of Banks in implementing a zoning database that provides a name service, management and security functions.

The motivation to do so is to allow the creation of segmentation or zones within a fabric so that devices coupled to the fabric can be subdivided into logical groups of devices without the need to physically reconfigure the network, and to dynamically and quickly adapt the configuration of devices to varying network needs.



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7. Claims 16-17, 36, 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crockett in view of Ofek et al. (USP 5,901,327).

Regarding claims 16-17, 36, 57-58, Crockett discloses all the aspects of the claimed invention set forth in the rejection of claims 2, 22, 41 above, except fails to explicitly show the method of claim 1, wherein the act of detecting the loss of the commit master comprises failing to receive a second message from the commit master within a specified time period.

However, Ofek discloses a remote data mirroring system that indicates a failure occurs if no response is received at a primary data storage system after a predetermined amount of time (col. 12, lines 42-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the distributed storage system of Crockett with the teaching of Ofek in indicating an update failure condition if no acknowledgement is received after a specified amount of time such that the distributed storage system of Crockett will comprise a detection means to detect the loss of the commit master comprises failing to receive a second message from the commit master within a specified time period.

The motivation to do so is to set a timeout period condition to indicate whether a data update failure occurs or not.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1, 22, 28, 41, 47 have been considered but are moot in view of the new ground(s) of rejection.

*Allowable Subject Matter*

9. Claims 8-11, 13-15, 19-21, 29-35, 38-40, 48-52, 54-56, 59-61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 8, 29, 48, wherein the act of sending the abort message comprises sending a Release Change Authorization message.

Regarding claims 9, 30, 49, wherein the act of receiving a first message comprises: receiving an Acquire Change Authorization message; and sending an accept message to the commit master.

Regarding claims 10, 31, 50, wherein the act of receiving a first message comprises: receiving a Stage Fabric Configuration message; and sending an accept message to the commit master.

Regarding claim 51, wherein the instructions to receive a Stage Fabric Configuration message further comprise instructions to verify the update data.

Regarding claims 11, 32, 52, wherein the act of receiving a first message comprises: receiving an Update Fabric Configuration message; and sending an accept message to the commit master.

Regarding claims 13, 33, 54, wherein the act of receiving a first message comprises:

receiving a first update message from a first switch and a second update message from a second switch;

accepting one of the first or second update messages; and

rejecting the other of the first or second update messages.

Regarding claims 19, 38, 59, further comprising:

receiving a second message from one of the identified one or more devices; and

aborting the update operation specified in the resent message.

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*Conclusion*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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